

**TITLE 2. ADMINISTRATION
DIVISION 3. STATE PROPERTY OPERATIONS
CHAPTER 1. STATE LANDS COMMISSION
ARTICLE 4.8. BIOFOULING MANAGEMENT REGULATIONS FOR VESSELS
OPERATING IN CALIFORNIA WATERS**

NOTICE OF PROPOSED REGULATORY ACTION

The California State Lands Commission (Commission) proposes to amend the regulations described below after considering all comments, objections or recommendations regarding the proposed action.

PROPOSED REGULATORY ACTION

The Commission proposes to amend and renumber Section 2298 and adopt Sections 2298.1, 2298.2, 2298.3, 2298.4, 2298.5, 2298.6, 2298.7, and 2298.8 under Article 4.8 in Title 2, Division 3, Chapter 1 of the California Code of Regulations (CCR). These sections would establish regulations governing the management of hull fouling (hereafter referred to as biofouling) on vessels arriving to a California port or place, as required by Public Resources Code (PRC) Section 71204.6. The proposed regulatory action would establish performance standards for biofouling management, and would set record keeping and reporting requirements for all vessels specified in PRC Section 71201. Additionally, the proposed regulatory action would establish inspection or cleaning requirements for high risk vessels remaining in a port, place, or shared waters for ninety days or greater. Provisions are also included to provide a process for the submission and approval of petitions for alternatives to Article 4.8, should such cases occur.

WRITTEN COMMENT PERIOD

Any interested person or his or her authorized representative may submit written comments relevant to the proposed regulatory action to the Commission. The written comment period closes at 5:00 pm on October 31, 2011. All written comments must be received at the Commission by that time. Written comments should be submitted to:

Ravindra Varma
Supervisor, Planning Branch
California State Lands Commission
Marine Facilities Division
200 Oceangate, Suite 900
Long Beach, CA 90802

Written comments may also be submitted by facsimile at (562) 499-6317 or by email to Ravi.varma@slc.ca.gov.

PUBLIC HEARING

The Commission has not scheduled a public hearing for this proposed action. However, the Commission will hold a hearing if it receives a written request for a public hearing from any interested person, or his or her authorized representative, no later than 15 days before the close of the written comment period.

AUTHORITY AND REFERENCE

PRC Section 71201(d) declares that the purpose of the Marine Invasive Species Act (the Act) is to move the State expeditiously towards elimination of the discharge of nonindigenous species into waters of the State. In enforcing the provisions of the Act, the Commission is authorized to adopt the proposed regulations, which would implement, interpret, and make specific PRC Section 71204.6. This statute directs the Commission to develop and adopt regulations governing the management of biofouling on vessels arriving to a California port or place.

INFORMATIVE DIGEST/POLICY STATEMENT OVERVIEW

PRC Section 71204.6 requires the Commission to develop and adopt regulations governing the management of biofouling on vessels arriving to a California port or place. PRC Section 71204.6 also mandates the Commission to consider vessel design and voyage duration in developing these regulations. The section further requires the Commission to develop the regulations based on the best available technology economically achievable and to design the regulations to protect the waters of the state.

Accordingly, the proposed regulation would implement and make specific the biofouling management requirements under PRC Section 71204.6. Without the regulations, the purpose of the Act as described in PRC Section 71201(d) cannot be achieved.

Section 2298 of the California Code of Regulations is amended and renumbered as 2CCR2298.7 to align with PRC Section 71205(e), which mandates that the requirements contained within 2 CCR Section 2298 continue until the date the regulations described in PRC Section 71204.6 (i.e. the proposed regulations) are adopted. The "Hull Husbandry Reporting Form" revision date has been amended from June 6, 2008 to August 18, 2011. The revised form is reincorporated by reference and is available for review.

The purpose of the Hull Husbandry Reporting Form revision was to change the timing of annual submission from "within 60-days of receiving a written or electronic request from the Commission" to "twenty-four hours in advance of the first arrival of the calendar year to a California port or place."

Section 2298.1(a) would set the purpose of Article 4.8.

Section 2298.1(b) would specify the vessels to which these regulations apply.

Section 2298.1(c) would identify the date of implementation of these regulations.

Section 2298.2 would narrowly define key terms that are used throughout the language of the regulations to describe management requirements and regulation applicability. These definitions ensure that the regulatory language is clear to the regulated industry and ensure that compliance occurs as intended by the regulations.

Section 2298.3 would prescribe performance standards for biofouling management that have been deemed the most biologically effective and economically feasible actions that will move the state expeditiously toward elimination of the discharge of nonindigenous species into the waters of the state. This section also describes the implementation timeline for new and existing vessels, and describes the requirements to maintain compliance-related documentation onboard.

Section 2298.4 would prescribe requirements for a Biofouling Management Plan, which would be maintained onboard the vessel and made available to Commission Marine Safety personnel upon request. The Biofouling Management Plan would contain specific information about the vessel's biofouling management strategies and the types of anti-fouling systems used.

Section 2298.5 would prescribe requirements for a Biofouling Record Book, which would be maintained onboard the vessel and made available to Commission Marine Safety personnel upon request. The Biofouling Record Book would contain specific information about the vessel's biofouling management actions.

Section 2298.6 would set specific inspection or cleaning requirements for vessels that remain in a specific port, place or shared waters for ninety days or greater prior to arriving to a California port or place.

Section 2298.7 would require submission of an annual reporting form to enable the Commission to collect necessary data to prioritize boarding and inspection, based on a per-vessel risk assessment. It would also provide the necessary data to evaluate the efficacy of the proposed regulations and to inform any further revisions of these regulations, if necessary.

Section 2298.8 would describe a process for the submission and approval of petitions for alternatives to Article 4.8, should such cases occur. Alternatives proposed in petitions must fulfill the purpose of the regulation in Section 2298.1(a), and will be approved or withdrawn by the Division Chief.

DIFFERENCES FROM FEDERAL REGULATIONS

Federal requirements for biofouling management to prevent the introduction of nonindigenous species can be found within the Code of Federal Regulations, specifically 33CFR151.2035 (a)(5) and 33CFR151.2035 (a)(6). These regulations require rinsing of the anchors and anchor chains to remove organisms at their place of

origin as well as a requirement to remove biofouling from the hull, piping, and tanks on a regular basis and to dispose of any removed substances in accordance with local, State and Federal regulations. These requirements are also included in the Act, specifically PRC 71204(e) and 71204(f). The federal requirements do not offer any guidance as to the frequency of biofouling removal, other than the undefined phrase “regular basis.” Therefore, there is no specific federal requirement to maintain biofouling below a defined threshold and no federal requirement to keep onboard records, or to submit reporting forms, detailing biofouling management activities. There also are no federal requirements for high-risk vessels that remain in one location for extended periods of time to manage biofouling prior to entering a United States (US) port or place.

The biofouling management practices and performance standards prescribed by these proposed regulations are necessary to minimize the transport of NIS into and throughout the waters of the State of California.

Small Business Determination

The Commission has determined that these regulations do not affect small businesses as defined in Government Code (Gov. C.) Section 11342.610, because all affected businesses are commercial maritime transport owners and operators, as specified under Gov C. Section 11342.610(c)(7) and having annual gross receipts of more than \$1,500,000.

Plain English Policy Overview

The proposed regulations have been drafted in a plain and straightforward manner and do not contain technical terms that require a plain English policy overview.

ESTIMATED COSTS TO THE STATE

No costs to the State would be incurred in implementing and enforcing these proposed regulations. The programs mandated by the Act are funded exclusively by the Marine Invasive Species Control Fund, through fees collected from the owners of vessels subject to the Act.

DISCLOSURES REGARDING THE PROPOSED ACTION

The Commission has made the following determinations:

The Commission has determined that the proposed regulation does not impose any mandates on local agencies or school districts.

The Commission has determined that the proposed regulation does not impose any mandate requiring state reimbursement to any local agency or school district, pursuant to Government Code Sections 17500 *et seq.* No other non-discretionary cost or savings imposed on local agencies is anticipated.

The Commission has determined that no costs or savings to any other state agencies are anticipated.

The Commission has determined that the proposed regulation will have no significant impact upon any of the following:

- (1) Creation or elimination of jobs within the State of California;
- (2) Creation of new business or the elimination of existing businesses within the State of California; and
- (3) Expansion of businesses currently doing business within the State of California.

The Commission has determined that the adoption of this regulation will not affect small businesses. None of the businesses that will be governed by these proposed regulations can be considered to be a 'small business' as defined in Gov. Code § 11342.610.

The Commission has determined that the proposed regulation will have no significant effects on housing costs.

The Commission has determined that the proposed regulation will have no impact on costs or savings in Federal funding to the State.

The Commission finds that the adoption of this regulation is necessary for the health, safety, or welfare of the people of this state.

The Commission has determined that the proposed regulation will have no significant statewide adverse economic impact directly affecting business, including the ability of California businesses to compete with businesses in other states.

Cost impact on private persons or directly affected businesses: The estimates presented here were obtained through three sources: 1) estimates provided by shipping industry representatives who were involved in the development of the proposed regulations. These were reported estimates which were not verified against official financial documentation; 2) data collected from the shipping industry by the Commission through mandatory submission of the Hull Husbandry Reporting Form since 2008. Only data from 2008 and 2009 have been analyzed to date, thus data from 2010 and 2011 are not utilized here; and 3) academic peer-reviewed papers and scientific gray literature.

The potential costs associated with the proposed regulatory action relate to several provisions in the proposed regulations. The costs associated with inspection and maintenance of the wetted surfaces to meet the performance standards for biofouling management are dependent on the current frequency of a vessel's maintenance

practices. At a bare minimum, most vessels are already required by the International Convention for the Safety of Life at Sea (SOLAS) to undergo out-of-water maintenance every five years. Commission-collected data indicates that the average vessel arriving to California undergoes out-of-water maintenance more frequently than this minimum. In 2008 and 2009, approximately 67 percent of vessels had been dry docked or delivered as new within the prior two years, and 84 percent within the prior three years. Additionally, most vessels are required by classification societies to undergo an intermediate survey approximately 2.5 years after the out-of-water maintenance. In addition, many vessel owners or operators elect to undertake additional in-water cleaning or propeller polishing in order to remove biofouling from the vessel to reduce biofouling-induced drag, the associated decrease in fuel efficiency, and the consequent increase in fuel costs. Propeller polishing is typically conducted as a first measure to address fuel efficiency, is often conducted every six months, and often includes a biofouling evaluation of the other underwater surfaces. Several shipping companies have indicated that they undergo propeller polishing and/or in-water inspection on a six-month interval. One company indicated that propeller polishing frequency is dependent on the vessel charterer; some request propeller polishing every six months, others every twelve months, and still others do not request propeller polishing until the intermediate inspection or the out-of-water maintenance. A regional maritime trade association indicated that it is the intent of its members to arrange for inspections on a six-month basis, but this is influenced by vessel type and trade lanes. Finally, a single company indicated that its vessels undergo hull cleaning every three years.

The estimated costs associated with the requirement to evaluate biofouling every six months (or within twelve months of out-of-water maintenance) ranges between “no impact” for vessel owners that currently undergo this type of maintenance on a six month interval to between \$4,000 and \$6,500 per vessel per survey. Therefore, the per-vessel cost of the required biofouling evaluations will likely be: 1) no impact if vessel is already inspected or undergoes propeller polishing on a six-month interval; 2) \$4,000 - \$6,500 per year if a vessel is on a 12-month inspection/polishing schedule (i.e. one additional evaluation per 12 months); or as much as 3) \$6,400 - \$10,400 per year for vessels that currently do not conduct any underwater maintenance other than the currently required intermediate survey (i.e. up to four additional evaluations totaling \$16,000 - \$26,000 over the 2.5 year period). One company indicated that if they were required to remove their vessel from service for an entire day to conduct the inspection, it would cost an additional \$50,000 due to the loss of a day of service. However, this assumes that the vessel would need to be removed from service for an entire day in order to conduct an inspection or propeller polishing. The same company also indicated on three separate occasions that their vessels undergo inspection or propeller polishing on a six-month frequency, thus not requiring any additional evaluations to meet the proposed regulations. This company later revised their frequency to every twelve months.

Several studies indicate that the potential costs associated with increased frequency of inspection or cleaning may be offset by a larger fiscal benefit from maintaining lower levels of biofouling. Increased levels of biofouling contribute towards increased

hydrodynamic drag, reducing the fuel efficiency, and ultimately resulting in elevated fuel consumption and operating costs. Proper maintenance of biofouling will result in lower operating costs, and studies suggest that the fuel savings would far outweigh the potential maintenance costs (Munk et al. 2009, Hydrex 2010, Schultz et al 2011). Schultz et al. (2011) evaluated costs associated with mid-sized US naval surface ships using the US Navy fouling rating system (FR), which at lower biofouling levels is consistent with the Level of Fouling ranking scale proposed in these regulations. The authors determined that a decrease from FR 30 (equivalent to the proposed Level of Fouling rank 2) to FR 20 (equivalent to the proposed Level of Fouling rank 1) would result in savings of approximately \$300,000 to \$400,000 in fuel costs per ship per year. These estimates were developed based on a mid-sized naval surface vessel so the exact savings may not be directly equivalent to the average merchant vessel, but the principles would be similar and there would undoubtedly be significant financial benefits to a vessel that was maintained to a Level of Fouling rank 1. Hydrex (2010) indicates that even a layer of microfouling (Level of Fouling rank 1) on a typical commercial cargo vessel travelling at twenty knots would result in an additional \$4,500 per day in fuel costs. This would equate to a cost of \$1.2 million per year for a single vessel.

There may also be costs associated with the development and maintenance of the required Biofouling Management Plan and Biofouling Record Book. Several companies have indicated that although there would be some costs associated with the development of these documents, most of the information is already kept onboard or as part of the Ship Management System. In these cases, the costs are expected to be minimal. One company indicated that it would cost \$4,000 per vessel to develop the Biofouling Management Plan and Biofouling Record Book. Finally several companies have indicated that the development of the two documents would require 80 person-hours, and the ongoing management and training would require 200 person-hours per year, with costs dependent on variable person-hour costs.

Companies which own or operate multiple vessels should be able to spread the cost of developing multiple sets of documents across these vessels resulting in reduced per-vessel costs. Additionally, both the Biofouling Management Plan and Biofouling Record Book proposed in these regulations are also part of the International Maritime Organization's Guidelines for the Control and Management of Ships' Biofouling to Minimize the Transfer of Invasive Aquatic Species. Although the IMO Biofouling Guidelines are voluntary, it is reasonable to assume that responsible owners and operators will adopt the guidelines and develop these documents, whether or not they are mandatory in California.

Section 2298.6, pertaining to the small minority of vessels remaining in one location for ninety days or greater may also have costs associated with it; however these costs will only be associated with a small percentage of the California fleet. In 2009, only 1.7% of the fleet reported remaining in one location for ninety days or greater since their most recent out-of-water maintenance. The costs for this specific regulation depend on the severity of the biofouling associated with the vessel and may range from \$4,000 to \$6,500 for in-water inspection, \$19,000 to \$27,000 for in-water cleaning, \$150,000 to

\$800,000 for out-of-water cleaning, or \$300,000 to \$1,200,000 for full out-of-water maintenance (including repainting). These cost ranges for these options are wide and the exact amount is dependent on the size and type of vessel. However, any costs incurred to comply with this regulation may be recouped (possibly surpassed) through fuel savings as a result of the decrease in biofouling-induced hydrodynamic drag, as discussed previously.

Finally, there may be minor costs associated with completing and submitting the Hull Husbandry Reporting Form. However, mandatory annual submission of this form has been required from every vessel operating in California since 2008. Therefore, there should be no significant increase in costs to continue to comply with this requirement.

CONSIDERATION OF ALTERNATIVES

In accordance with Government Code Section 11346.5, subdivision (a)(13), the Commission must determine that no reasonable alternative it considered or that has otherwise been identified and brought to the attention of the Commission would be more effective in carrying out the purpose for which the action is proposed or would be as effective and less burdensome to affected private persons than the proposed regulation.

The Commission invites interested persons to present statements or arguments with respect to alternatives to the proposed regulation during the written comment period.

CONTACT PERSONS

Inquiries concerning the substance of the proposed regulation may be directed to:

Christopher Scianni
Staff Environmental Scientist
California State Lands Commission
Marine Facilities Division
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202
Telephone: (916) 574-0209
Facsimile: (916) 574-1950

Or to: Mark A. Meier
Senior Staff Counsel
California State Lands Commission
100 Howe Avenue, Suite 100 South
Sacramento, CA 95825-8202
Telephone: (916) 574-1853
Facsimile: (916) 574-1855

Requests for copies of the proposed text of the regulations, the initial statement of reasons, the modified text of the regulations if any, or other information upon which the rulemaking is based should be directed to:

Ravindra Varma
Supervisor, Planning Branch
California State Lands Commission
Marine Facilities Division
200 Oceangate, Suite 900
Long Beach, CA 90802-4335
Telephone: (562) 499-6400
Facsimile: (562) 499-6317
Ravi.varma@slc.ca.gov

AVAILABILITY OF STATEMENT OF REASONS AND TEXT OF PROPOSED REGULATIONS

The Commission will have the entire rulemaking file available for inspection and copying throughout the rulemaking process at its offices at either of the above addresses. As of the date this notice is published in the Notice register, the rulemaking file consists of this notice, the proposed text of the regulations and the initial statement of reasons. Copies may be obtained by contacting Ravindra Varma as listed above.

AVAILABILITY OF CHANGED OR MODIFIED TEXT

After considering all timely and relevant comments, the Commission may adopt the proposed regulations substantially as described in this notice. If modifications are made which are sufficiently related to the original proposed text, the modified text, with changes clearly indicated, shall be made available to the public for at least fifteen days prior to the date on which the Commission adopts the regulations. Requests for copies of any modified regulations should be sent to the attention of Ravindra Varma at the address indicated above. The Commission will accept written comments on the modified regulation for fifteen days after the date on which they are made available.

AVAILABILITY OF THE FINAL STATEMENT OF REASONS

Upon its completion, copies of the Final Statement of Reasons may be obtained by contacting Ravindra Varma at the address or telephone number listed above or by accessing the web address listed below.

AVAILABILITY OF DOCUMENTS ON THE INTERNET

Copies of the Notice of Proposed Action, the Initial Statement of Reasons, the text of regulations, and other relevant documents can be accessed through our website at:

http://www.slc.ca.gov/Spec_Pub/MFD/Ballast_Water/Ballast_Water_Default.html